

Research and Development



AERIAL PHOTOGRAPHIC ANALYSIS OF FOUR RCRA WASTE DISPOSAL SITES

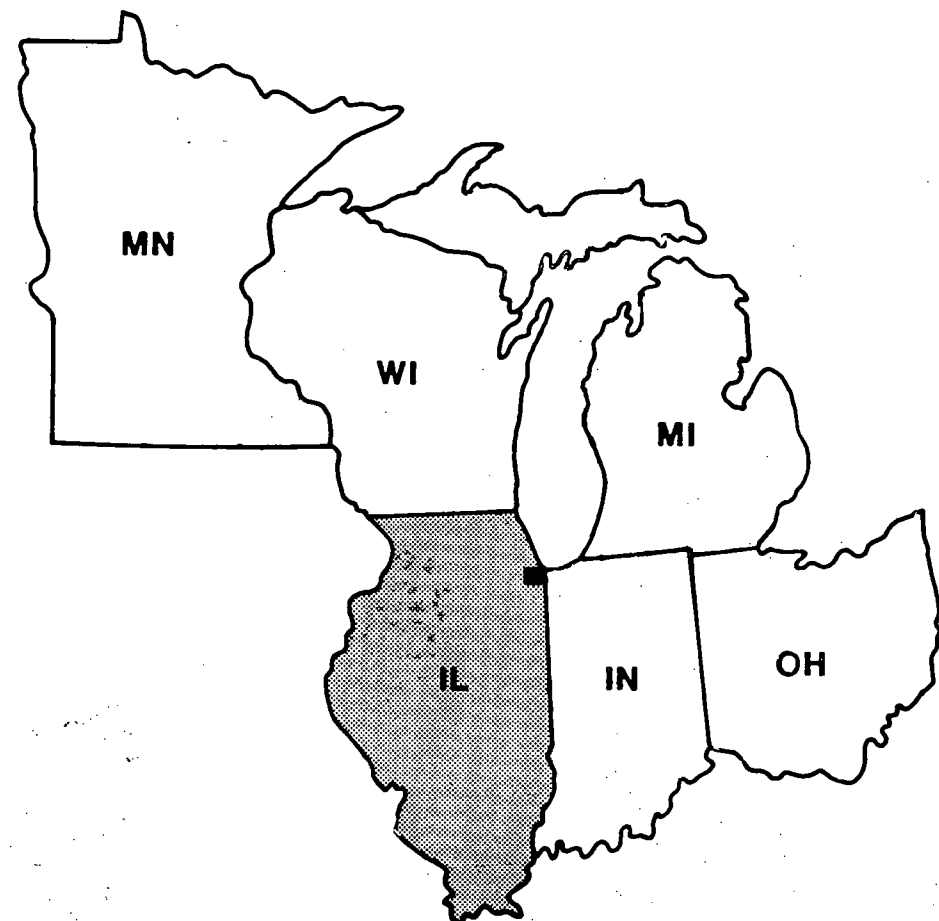
Chicago, Illinois

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EPA Region 5



TS-AMD-85018/85603-15
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AERIAL PHOTOGRAPHIC ANALYSIS OF
FOUR RCRA WASTE DISPOSAL SITES

Chicago, Illinois

by

J. S. Duggan
Environmental Programs
Lockheed Engineering and Management Services Company, Inc.
Las Vegas, Nevada 89114

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Project Officer

C. E. Lake
Advanced Monitoring Systems Division
Environmental Monitoring Systems Laboratory
Las Vegas, Nevada 89114

ENVIRONMENTAL MONITORING SYSTEMS LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
U.S. ENVIRONMENTAL PROTECTION AGENCY
LAS VEGAS, NEVADA 89114

ABSTRACT

This report presents an analysis of current color aerial photographs that cover two Industrial facilities and two waste disposal facilities in Illinois. These are the 406-acre CID-Chemical Waste Management site, the 30-acre Inland Metals Refining Company, the 30-acre SCA-Chemical Services Company site, and the 138-acre Sherwin-Williams Company site. All four sites are located in Chicago, Illinois; three adjacent to Lake Calumet and one adjacent to the Little Calumet River. The analysis focused on identification of various types of waste disposal, surface disturbances, seepage, surface drainage, vegetation damage, and any potential threats to the environment.

The CID-Chemical Waste Management site is a large active waste disposal concern involved with solid waste and chemical waste disposal. There are several large disposal mounds on the site, one of which appears active. In addition, there is an aqueous waste dewatering system and an acid neutralization and fixation plant in operation. An active liquid discharge point can be seen on the photographs. The Inland Metals Refining Company site is a small metals smelting and refining operation situated west of Lake Calumet. Numerous piles of scrap metal and the machinery for reducing large metal pieces into small chunks are the major features of the site. There is no active waste disposal that is visible on or around the site although some 55-gallon drums are present. The SCA-Chemical Services Company facility occupies all of a manmade fill area that juts out into Lake Calumet from the eastern shore. There are four lined disposal lagoons and four general waste pits. The largest feature is an incinerator used to burn chemical wastes brought in by truck and rail. The Sherwin-Williams Company is involved in the production of various paints and other chemicals. Only two lagoons and two small ponds comprise the obvious waste disposal areas. However, a large mound and a filled area could possibly have been involved with waste disposal at some time in the past.

The analysis was performed by the U.S. Environmental Protection Agency's Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, in support of the Agency's Environmental Services Division in Region 5 and Office of Solid Waste in Washington, D.C. These sites are four of thirty-two sites in Illinois being monitored in order to ensure that activities at the sites comply with the provisions of the Resource Conservation and Recovery Act.

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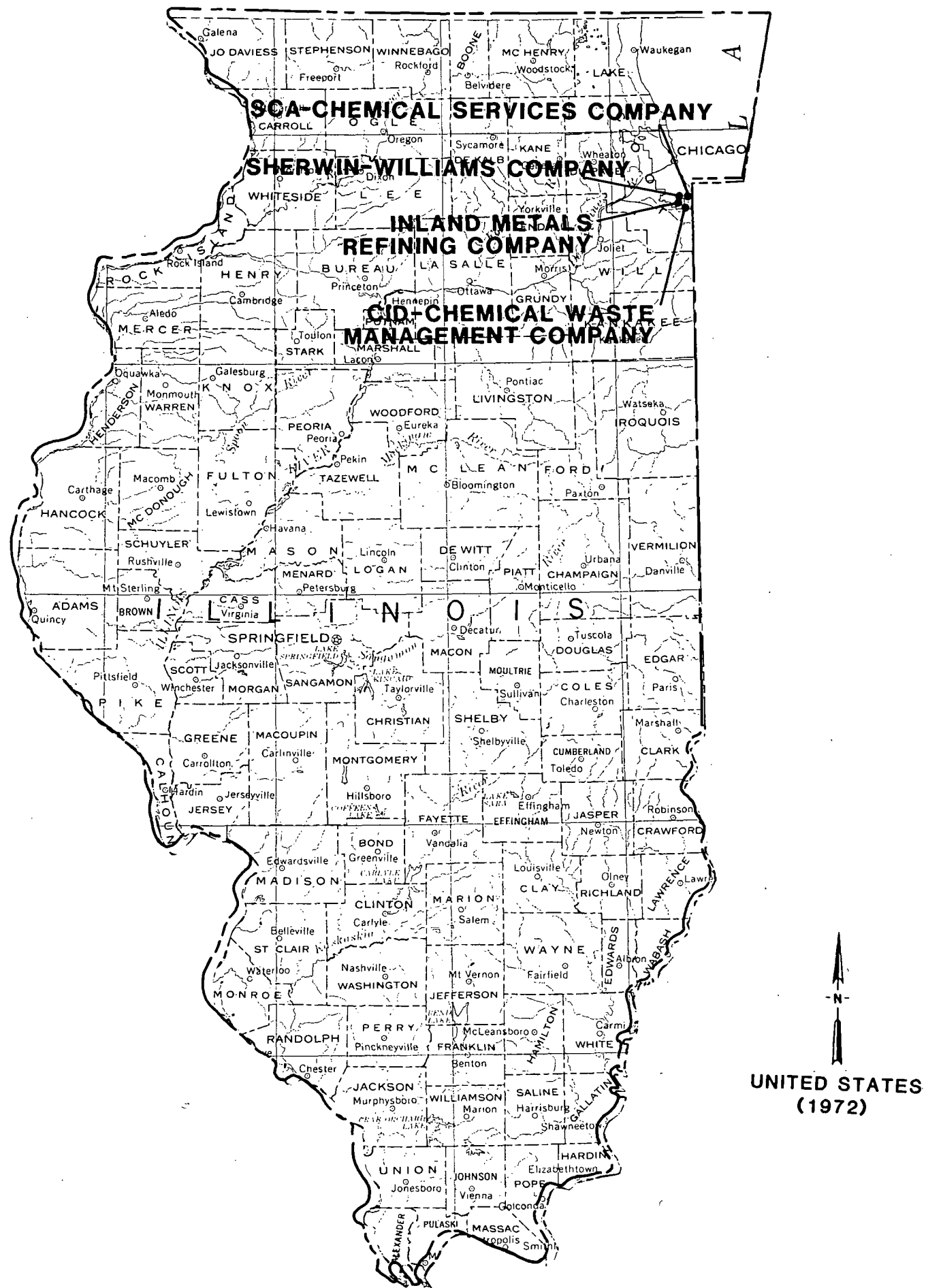


Figure 1. Study area locations, Illinois. Scale 1:2,500,000.

INTRODUCTION

This report presents an analysis of current color aerial photographs that cover four waste disposal/industrial facilities in Illinois. These are the CID-Chemical Waste Management Company, the Inland Metals Refining Company, the SCA Chemical Services Company, and the Sherwin-Williams Company. All of these sites are located in Chicago near Lake Calumet. The photographs show the status of all of the sites on June 6, 1985. The waste disposal practices used by these facilities are a major concern. The current analysis focused on identifying various types of waste disposal, surface drainage, seepage, surface disturbances, vegetation damage, and any potential threats to the environment.

These sites are four of thirty-two sites in Illinois being monitored in order to ensure that activities at the sites comply with the provisions of the Resource Conservation and Recovery Act (RCRA). Table 1 lists all the sites being covered under this project. Analysis of all sites except one is based on single-date photographs. The one exception is CHEMETCO, Inc. (#10) which is an intensive (multidate) analysis report.

The analysis was performed by the U.S. Environmental Protection Agency's (EPA) Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, at the request of EPA's Environmental Services Division in Region 5 and Office of Solid Waste in Washington, D.C.

TABLE 1 (Revised).† ILLINOIS RCRA SITES COVERED UNDER SERIES TS-AMD-85018/85603‡

REPORT SERIAL NUMBER‡	SITE NAME	LOCATION
1	Allied Chemical	Metropolis, IL
2	Brighton Landfill	Brighton, IL
3	National Marine	Hartford, IL
4	Velsicol Chemical	Marshall, IL
5	Reilly Tar & Chemical	Granite City, IL
6	Taracorp, Inc.	Granite City, IL
7	Kerr McGee Corp.	Madison, IL
8	U.S. Industrial Chemicals	Tuscola, IL
9	Koppers Corporation	Carbondale, IL
	Monsanto Company	Sauget, IL
	Texaco, Inc.	Lawrenceville, IL
	Trojan Corporation	Wolf Lake, IL
10	Chemetco, Inc.	Hartford, IL
11	ESL, Inc.	Joliet, IL
	Northern Petrochemical Company	Morris, IL
	Peoria Disposal, Inc.	Peoria, IL
	Peterson-Puritan, Inc.	Danville, IL
12	BFI/CECOS Landfill	Davis Junction, IL
	BFI/CECOS Landfill	Zion, IL
13	Modern Plating	Freeport, IL
	Northwestern Steel & Wire, Inc.	Sterling, IL
	U.S. Ecology Landfill	Sheffield, IL
14	Interlake	Chicago, IL
	Land & Lakes Landfill	Chicago, IL
	Paxton Landfill	Chicago, IL
15	CID Chemical Waste Management Co.	Calumet City, IL*
	Inland Metals Refining Company	Chicago, IL*
	SCA-Chemical Services Company	Chicago, IL*
	Sherwin-Williams Company	Chicago, IL*
16	Gilbert & Bennett	Blue Island, IL
	GMC Electromotive	McCook, IL
	Mobil Oil Company	Cicero, IL

†The report numbers given in this table have been revised since the listing given in report number TS-AMD-85018/85603-7 and previous reports in this series.

‡To identify individual reports, add the report serial number to series number.
For example: TS-AMD-85018/85603-1

*Included in this report.

METHODOLOGY

Stereoscopic pairs of historical and current aerial photographs are used to perform the analysis. Stereo viewing enhances the interpretation because it allows the analyst to observe the vertical as well as horizontal spatial relationships of natural and cultural features. Stereoscopy is also an aid in distinguishing between various shapes, tones, textures, and colors that can be found within the study area.

Evidence of waste burial is a prime consideration when conducting a hazardous waste analysis. Leachate or seepage resulting from burial and dumping of hazardous materials might threaten existing surface or ground-water sources. Pools of unexplained liquid are routinely noted because they can indicate seepage from buried wastes and may enter drainage channels that allow contaminants to move off the site. An excellent indicator of how well hazardous materials are being handled at a site is the presence or absence of spills, spill stains, and vegetation damage. Trees and other forms of vegetation that exhibit a marked color difference from surrounding members of the same species are labeled "dead," "stressed," or "damaged" based upon the degree of noticeable variation. Vegetation is so labeled only after consideration of the season in which the photographs were acquired.

The U.S. Environmental Protection Agency's Statement of Procedures on Floodplain Management and Wetlands Protection (Executive Orders 11988 and 11990, respectively) requires EPA to determine if removal or remedial actions at hazardous wastes sites will affect wetlands or floodplains and to avoid or minimize adverse impacts on those areas. To aid in compliance with these orders, significant wetland areas located within and adjacent to this site have been identified and delineated. However, these sites have not been visited to verify the accuracy of wetland identification.

Drainage analysis determines the direction a spill or surface runoff would follow. Direction of drainage is determined from analysis of the photographs and from U.S. Geological Survey topographic maps. Whenever they are available, 7.5-minute quadrangle maps (scale 1:24,000) are used to show site location and to

provide geographic and topographic information. Results of the analysis are shown on annotated overlays attached to the photos. The following table provides specifications of the photographs used in this report.

TABLE 2. AERIAL PHOTOGRAPHY SPECIFICATIONS

Site name, location, and geographic coordinates	Figure	Date of acquisition	Original scale	Film type	Photo source†
CID Chemical Waste	3	6/06/85	1:8,400	Color	EMSL (85018)
Management Co.	4	6/06/85	1:8,400	Color	EMSL (85018)
Calumet City/Chicago, IL	5	6/06/85	1:8,400	Color	EMSL (85018)
(41°38.96'N 87°34.5'W)	6	6/06/85	1:8,400	Color	EMSL (85018)
Inland Metals Refining Co.	7	6/06/85	1:8,400	Color	EMSL (85018)
Chicago, IL					
(41°40.5'N 87°36.7'W)					
SCA Chemical Services	8	6/06/85	1:6,000	Color	EMSL (85018)
Chicago, IL					
(41°40.9'N 87°34.85'W)					
Sherwin-Williams Company	9	6/06/85	1:8,400	Color	EMSL (85018)
Chicago, IL					
(41°40.9'N 87°36.4'W)					

†Photo source identification:

EMSL: U.S. Environmental Protection Agency, Environmental Monitoring Systems Laboratory, Las Vegas, Nevada.

The photographs used in this report are free of clouds and cloud shadows. The study area locations are shown on a State of Illinois map (Figure 1). The site locations for all sites are portrayed on the Lake Calumet, Illinois, 7.5-minute (1:24,000) topographic quadrangle (Figure 2).

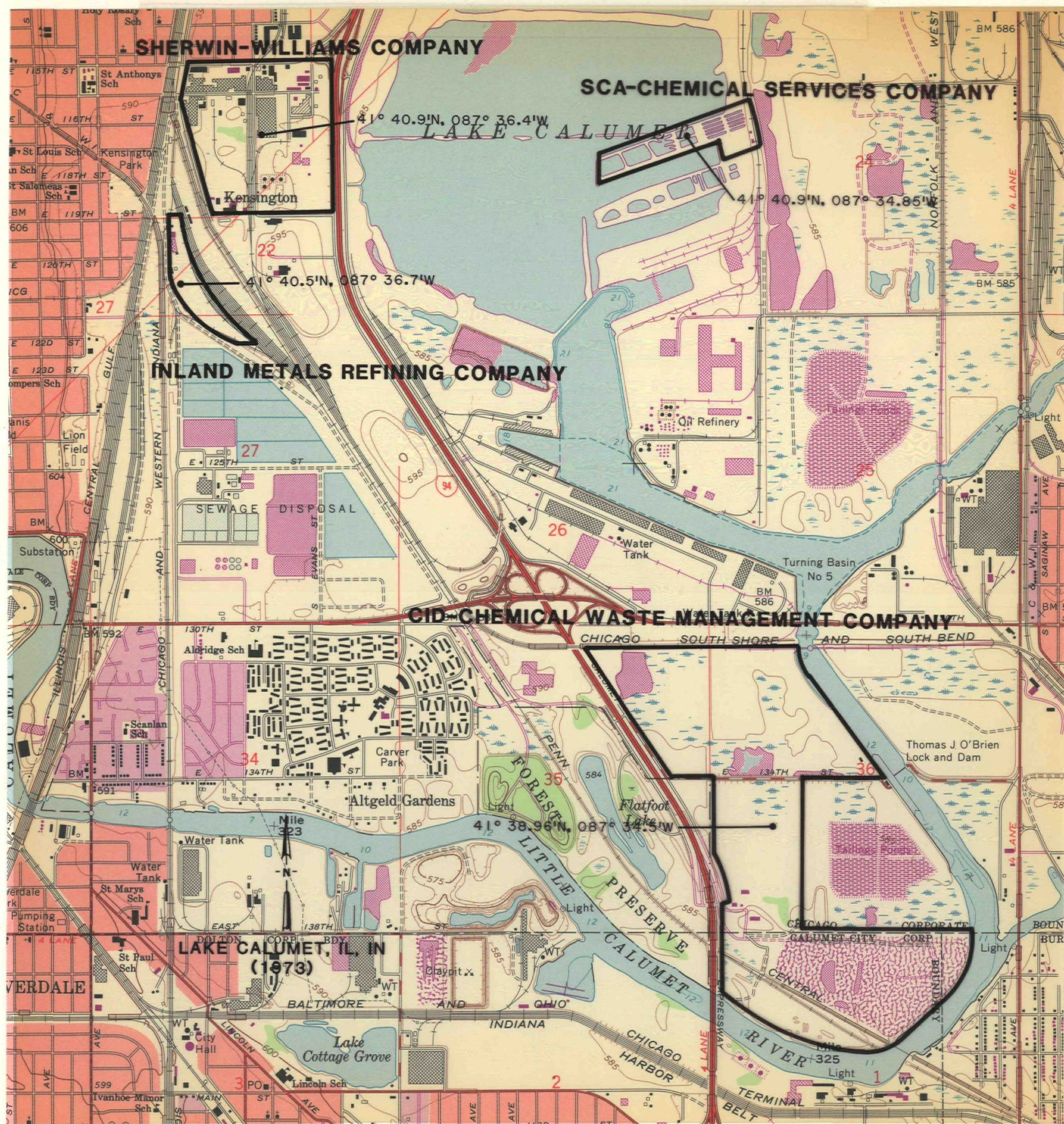


Figure 2. Site locations, Chicago-Calumet City area, Illinois. Scale 1:24,000.

ANALYSIS SUMMARY

The CID Chemical Waste Management site is a large active waste disposal concern involved with solid waste and chemical waste disposal. There are several large disposal mounds on the site one of which appears active. In addition, there is an aqueous waste dewatering system and an acid neutralization and fixation plant in operation. An active liquid discharge point can be seen on the photographs. The Inland Metals Refining Company site is a small metals smelting and refining operation situated west of Lake Calumet. Numerous piles of scrap metal and the machinery for reducing large metal pieces into small chunks are the major features of the site. There is no active waste disposal that is visible on or around the site although some 55-gallon drums are present. The SCA Chemical Services Company facility occupies all of a manmade fill area that juts out into Lake Calumet from the eastern shore. There are four lined disposal lagoons and four general waste pits. The largest feature is an incinerator used to burn chemical wastes brought in by truck and rail. The Sherwin-Williams Company is involved in the production of various paints and other chemicals. Only two lagoons and two small ponds comprise the obvious waste disposal areas. However, a large mound and a filled area could possibly have been involved with waste disposal at some time in the past.

Flood Insurance Rate maps published by the Federal Emergency Management Agency indicate that any 100-year flood event would not affect the Inland Metals Refining site, the SCA-Chemical Services site, and the Sherwin-Williams site. The CID-Chemical waste management site would be affected as it is adjacent to the Little Calumet River.

CID-CHEMICAL WASTE MANAGEMENT FACILITY
CHICAGO, ILLINOIS

PHOTO ANALYSIS

CID-CHEMICAL WASTE MANAGEMENT FACILITY

The CID-Chemical Waste Management facility is located in south Chicago, Illinois with the southern portion of the site within the corporate limits of Calumet City, Illinois. The site occupies approximately 406 acres in an old wetland area adjacent to the Little Calumet River. Remnants of this wetland can be seen in an adjacent 135-acre parcel owned by the Metropolitan Sanitary District of Greater Chicago (MSDGC) (Figures 3, 4, 5, and 6). All traces of the wetlands on the CID facility have been obliterated by the large landfills and waste disposal facilities.

The active solid waste disposal area is located in the northern section of the site (Figure 3). Numerous trucks hauling solid waste are present as are several bulldozers. Two large mounds, probably fill material, are located near the runoff retention ponds. A large pit approximately 770 by 245 feet is in the process of being excavated. A drag line is present at the bottom of the pit along with a pump to remove excess water. There is no evidence of waste disposal so this pit may be the source of the nearby fill stockpiles. One small pipeline is visible leading from the landfill mound to the retention ponds and may be part of the leachate collection system. A discharge point into the Little Calumet River is noted east of the retention ponds and is identified by the regional office as having an NPDES permit number. A plume from this point can be seen on Figure 4.

At the center of the site are two disposal facilities identified by information supplied by Region 5 as the acid neutralization and fixation area and the aqueous waste dewatering system (Figures 3 and 5). Both areas contain processing tanks and pipelines and both appear well maintained and clean. To the south but within the same security fence line is a drum receiving area containing 381 drums, but no spill stains are evident (Figure 5). In addition this portion of the site contains the offices for CID and ACE Disposal along with the associated maintenance facilities. Also, there is a laboratory, a synthetic fuels office, and a methane recovery plant. All of these areas appear clean and well maintained.

East of the methane recovery facility is a large closed landfill (Figure 5 and 6). Surface drainage off this mound generally flows in all directions but along the east side it flows toward the Little Calumet River and along the north toward the wetlands of the MSDGC. Finally south of the Penn Central Railroad tracks that cross the site (Figures 5 and 6) are new fill areas situated between the tracks and the river. At the east end of this area (Figure 6) is a lined pit with a small pool of liquid at the bottom. A large excavation is a major feature in this portion of the site and it appears that some refilling has taken place (Figure 5). Also there are two large mounds of earthen material probably used for fill material. The excavation does not appear to be lined but there is no evidence of any seepage from groundwater or the river. Finally, a small impoundment about 385 by 100 feet and containing a green liquid, is present on the west side of this area but no inlet or outlet can be seen on the photograph.



INTERPRETATION CODE

BOUNDARIES AND LIMITS

x-x-x-x FENCED SITE BOUNDARY

— UNFENCED SITE BOUNDARY

x x x x x x FENCE

— STUDY AREA

DRAINAGE

--- DRAINAGE

→ FLOW DIRECTION

--- INDETERMINATE DRAINAGE

TRANSPORTATION/UTILITY

===== VEHICLE ACCESS

+ + + + + RAILWAY

SITE FEATURES

||||| DIKE

SL STANDING LIQUID

SL STANDING LIQUID

EXCAVATION, PIT (EXTENSIVE)

MOUNDED MATERIAL (EXTENSIVE)

MM MOUNDED MATERIAL (SMALL)

CR CRATES/BOXES

DR DRUMS

HT HORIZONTAL TANK

PT PRESSURE TANK

VT VERTICAL TANK

CA CLEARED AREA

DG DISTURBED GROUND

FL FILL

IM IMPOUNDMENT

LG LAGOON

OF OUTFALL

SD SLUDGE

ST STAIN

SW SOLID WASTE

TR TRENCH

VS VEGETATION STRESS

WD WASTE DISPOSAL AREA

WL WETLAND

Figure 3. CID-Chemical Waste Management, June 6, 1985 (1 of 4). Approximate scale, 1 inch equals 700 feet.



INTERPRETATION CODE

BOUNDARIES AND LIMITS

- X-X-X-X-X FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- X X X X X X FENCE
- STUDY AREA

DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

TRANSPORTATION/UTILITY

- ==== VEHICLE ACCESS
- + + + + RAILWAY

SITE FEATURES

- ||||| DIKE
- SL STANDING LIQUID
- SL STANDING LIQUID
- EXCAVATION, PIT (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR CRATES/BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FL FILL
- IM IMPOUNDMENT
- LG LAGOON
- OF OUTFALL
- SD SLUDGE
- ST STAIN
- SW SOLID WASTE
- TR TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WL WETLAND

Figure 4. CID-Chemical Waste Management, June 6, 1985 (2 of 4). Approximate scale, 1 inch equals 700 feet.



INTERPRETATION CODE

BOUNDARIES AND LIMITS

- X—X—X— FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- XXXXXX FENCE
- STUDY AREA

DRAINAGE

- DRAINAGE
- > FLOW DIRECTION
- INDETERMINATE DRAINAGE

TRANSPORTATION/UTILITY

- ===== VEHICLE ACCESS
- +++++ RAILWAY

SITE FEATURES

- ||||| DIKE
- SL STANDING LIQUID
- SL STANDING LIQUID
- EXCAVATION, PIT, (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR CRATES/BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FL FILL
- IM IMPOUNDMENT
- LG LAGOON
- OF OUTFALL
- SD SLUDGE
- ST STAIN
- SW SOLID WASTE
- TR TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WL WETLAND

Figure 5. CID-Chemical Waste Management, June 6, 1985 (3 of 4). Approximate scale, 1 inch equals 700 feet.



INTERPRETATION CODE

BOUNDARIES AND LIMITS

- X—X—X— FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- X X X X X FENCE
- STUDY AREA

DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

TRANSPORTATION/UTILITY

- ===== VEHICLE ACCESS
- +++++ RAILWAY

SITE FEATURES

- |||||| DIKE
- SL STANDING LIQUID
- SL STANDING LIQUID
- EXCAVATION, PIT (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR CRATES/BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FL FILL
- IM IMPOUNDMENT
- LG LAGOON
- OF OUTFALL
- SD SLUDGE
- ST STAIN
- SW SOLID WASTE
- TR TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WL WETLAND

Figure 6. CID-Chemical Waste Management, June 6, 1985 (4 of 4). Approximate scale, 1 inch equals 700 feet.

INLAND METALS REFINING COMPANY
CHICAGO, ILLINOIS

PHOTO ANALYSIS

INLAND METALS REFINING COMPANY

The Inland Metals Refining Company is located in south Chicago, Illinois, just north of a large sewage disposal facility and west of Lake Calumet. The site, approximately 30 acres in size, is situated between an old Penn Central Railroad yard and the Chicago and Western Indiana Railroad. Access to the site is provided by a small two-lane road from the north. At one time there was rail access from the Penn Central Railroad but it appears this access is no longer functional.

This facility is involved in the smelting and refining of metals and appears to be a small operation. The site contains numerous piles of scrap metal and machinery for reducing large metal pieces into small chunks. At least 14 scrap-metal-filled railroad hopper cars are present. As there is no outside rail access these cars appear to be for on-site use only. There are several cranes present, all mounted on flat-bed railcars. There are some drums near the west gate but no evidence of any spills. There are numerous stains around the facility, but in all cases they appear to be small. There is no evidence that any of the spilled material has migrated offsite. There also is no evidence of any waste disposal onsite. Some piles of debris are present around the perimeter of the facility but it does not appear that the site is the source of this material.

SCA CHEMICAL SERVICES COMPANY
CHICAGO, ILLINOIS

PHOTO ANALYSIS

SCA CHEMICAL SERVICES COMPANY

The SCA Chemical Services Company facility is located on the east shore of Lake Calumet in Chicago, Illinois. The facility is approximately 30 acres in size and is situated on man-made fill area which extends out into the lake. The eastern portion of the site is secured with a fence. Access to the site is provided by a two lane gravel road and from a spur of the Norfolk and Western Railroad.

The site consists of a large incineration unit, four liquid waste lagoons, four small waste pits, and a variety of support buildings. In addition, there are two mounds at the west end of the site. The largest of these is approximately 2.45 acres while the other is 1.9 acres. It is not possible to determine if these mounds contain waste material. The four lagoons all contain liquid and all appear to be lined. The four lagoons occupy about 2.6 acres and are secured by a fence. An uncontained vertical storage tank just to the east is connected to the lagoons by a small pipeline. It would appear that a major spill from this tank could reach the lake. The four small waste pits each containing waste material, are located east of the lagoons. Two small (500 gallons or less) fuel tanks are also located in this same general area and there are spill stains around each. It would appear that in the event of a spill there would not be sufficient volume to reach the lake.

In the main area of the facility the predominant feature is a large incineration unit used to burn waste material. There are ten vertical storage tanks in this area along with 82 55-gallon drums. In addition, there are numerous crates and some open storage bins. A small area of construction is visible and it appears another building will be erected at this point. There is no evidence that any waste material has migrated offsite into the lake.

South of the SCA facility is a second waste disposal operation. Four tank-trucks are present offloading waste materials into a small waste pit. There are four well-contained storage tanks and 37 55-gallon drums. Drainage from the pit area could reach the lake as could spillage from some of the drums.



Figure 8. SCA Chemical Services Company, June 6, 1985. Approximate scale, 1 inch equals 500 feet.

SHERWIN-WILLIAMS COMPANY
CHICAGO, ILLINOIS

PHOTO ANALYSIS

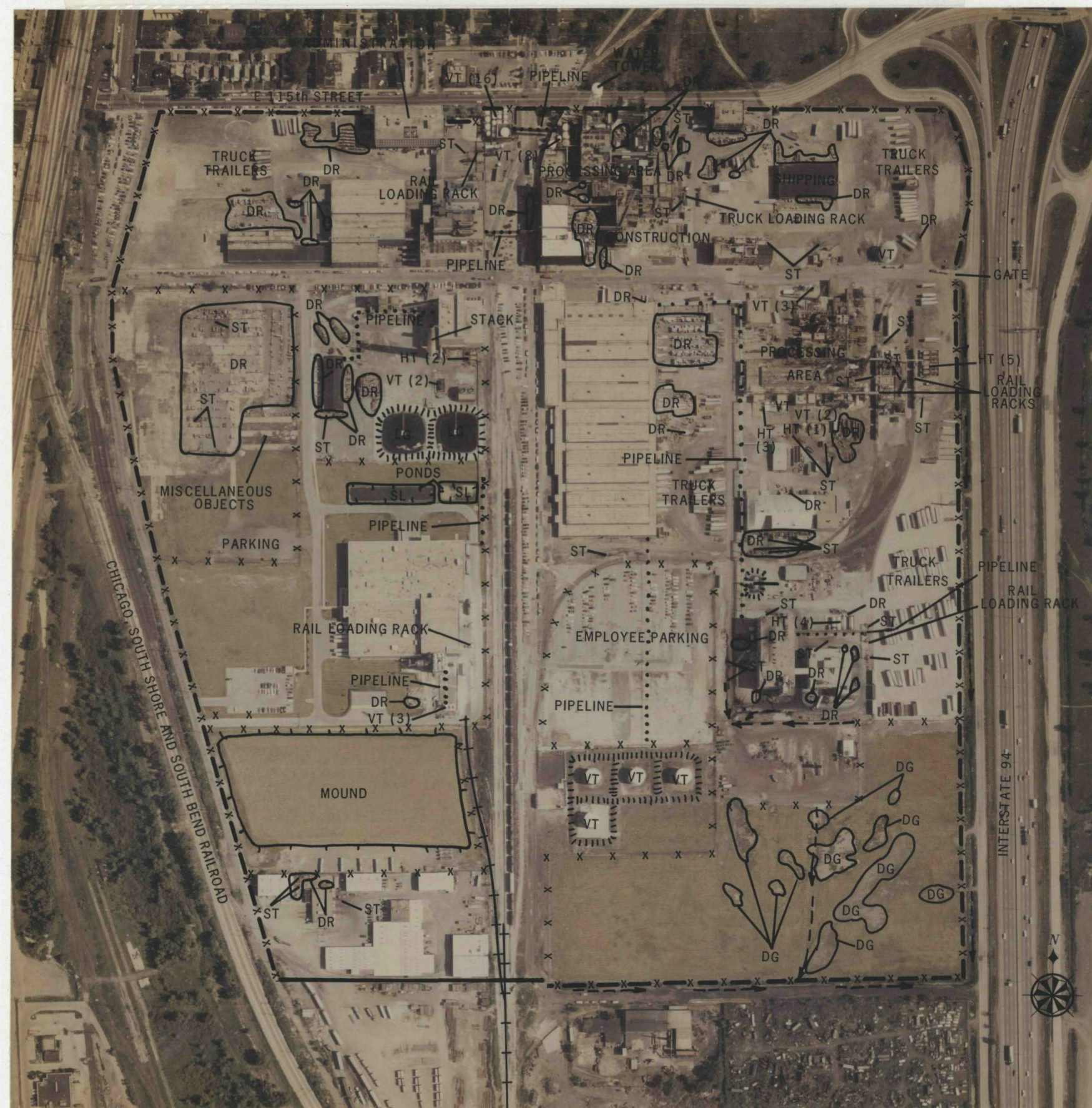
SHERWIN-WILLIAMS COMPANY

The Sherwin-Williams Company facility is located in south Chicago, Illinois, and is involved in the production of various paints, lacquers, chemicals, pigments, and varnishes. The site is situated on approximately 138 acres west of Lake Calumet between Interstate 94 and the Chicago South Shore and South Bend Railroad tracks. Access to the site is provided by several roads and rail spurs from the Chicago South Shore and South Bend Railroad. As the site is built on reasonably level ground there are no overall discernable drainages with the exception of one channel in the southeast corner. Surface runoff from the site is probably channeled to the local storm sewer system which probably empties into Lake Calumet.

There is only one obvious waste disposal operation within the site. There are two lined liquid waste lagoons (each about 125 x 125 feet) and two small unlined ponds near the center of the site. All four contain liquid but only the lagoons appear to contain waste liquids. The smaller pond (112 by 45 feet) appears to have vegetation and algae growth while the other pond (248 by 45 feet) contains a clear liquid. No outlets can be located for these four impoundments.

Two other areas of the site may have been involved with waste disposal at some time in the past. The first is a mound located in the southwest corner of the site. It is approximately 5 acres in size and rises about 15-20 feet above the surrounding site level. Also this mound is secured by a fence with the only access point along the south fence line. There are nine tank trailers parked near the mound. The second area is located in the southeast corner of the site. There are numerous areas of disturbed ground which may be nothing more than failed revegetation areas. However, an analysis of the topographic quadrangle (Figure 2) indicates this area was a terrain depression at the time of mapping. An analysis of the current imagery indicates no depression in this area and in fact a drainage channel leading offsite is present. It is therefore reasonable to assume that some type of filling activity has occurred at this location.

Thousands of 55-gallon drums are a major feature in this site. They can be found throughout the facility from small groups of 5-15 to stacks of several thousand. Numerous spill stains can be seen around various groups of drums although there is no indication that the spillage has migrated any distance from the spill point. Spill stains are also noted around the various rail- and truck-loading racks. Surface runoff could wash spilled waste material to the nearest storm sewer. There are numerous vertical and horizontal tanks present and all appear to be well contained.



INTERPRETATION CODE	
BOUNDARIES AND LIMITS	
—x—x—x—	FENCED SITE BOUNDARY
————	UNFENCED SITE BOUNDARY
x x x x x x	FENCE
-----	STUDY AREA
DRAINAGE	
----->	DRAINAGE
----->	FLOW DIRECTION
----->-----	INDETERMINATE DRAINAGE
TRANSPORTATION/UTILITY	
=====	VEHICLE ACCESS
+++++	RAILWAY
SITE FEATURES	
	DIKE
~~~~~	STANDING LIQUID
SL	STANDING LIQUID
⊖	EXCAVATION, PIT (EXTENSIVE)
⊕	MOUNDED MATERIAL (EXTENSIVE)
MM	MOUNDED MATERIAL (SMALL)
CR	CRATES/BOXES
DR	DRUMS
HT	HORIZONTAL TANK
PT	PRESSURE TANK
VT	VERTICAL TANK
CA	CLEARED AREA
DG	DISTURBED GROUND
FL	FILL
IM	IMPOUNDMENT
LG	LAGOON
OF	OUTFALL
SD	SLUDGE
ST	STAIN
SW	SOLID WASTE
TR	TRENCH
VS	VEGETATION STRESS
WD	WASTE DISPOSAL AREA
WL	WETLAND

Figure 9. Sherwin-Williams Company, June 6, 1985. Approximate scale, 1 inch equals 355 feet.